

**Aero Design Ltd.****Work Order Control Sheet**Work Order#: 2017-101 Date Opened: 14 June 2017 Title: FabricationAircraft OEM: Eurocopter Aircraft Model: AS350 Product Type: Bicycle Rack Product Model: Beam / Adapter Quantity: 42/42**Work Order Contents**

Work Order/Build Sheets (Procedures Provided)  
Additional Work Sheets (Standard Practice)  
Drawings (See List Below)  
Parts Distribution Sheet  
Sub Component Tags  
Completed Certification  
Time Sheet (R&D)  
Notes

Initial or N/A

JC
N/A
JC
N/A
N/A
JC
N/A
N/A

**Build Sheet Contents**

Tasks Initialled  
Dual Inspections Initialled

Initial or N/A

JC
JC

**Drawing List**

Drawing #	Rev #	Description	Initial or N/A
100230	0	Beam Fabrication	JC

**Traveller**

Initial or N/A


**Component Completion**

Quantity Complete on This Work Order  
Quantity Incomplete on This Work Order  
Further Processing Required Before Release  
Release to Stock as Components

As Instructed

42 / 42
0
N/A
N/A

**Certification**

Form One Completed  
Serviceable (Green) Tag Completed  
In Process (Yellow) Tag Completed  
Unserviceable (Red) Tag Completed  
Parts Placed in Stores for Distribution

Initial or N/A

N/A
N/A
JC
N/A
JC

**Additional Documentation**

Documentation of a minor change  
Non-Conformance Report Required  
Service Difficulty Report Required

Initial or N/A

N/A
N/A
N/A

**Billing**

Local (Aero Design)  
Research and Development  
Third Party

Initial or N/A

JC
N/A
N/A

**Notes:**

Work performed by:

ICC / Dual Inspection performed by:

Work Order closed by:

Print: J. Clarke

Print: J. Rekve

Print: J. Clarke

Sign:

Sign:

Sign:

SCA: AD02

SCA: AD01

SCA: AD02

Date: 26 July 2019

Date: 09 Aug 2019

Date: 09 Aug 2019

Approved Manufacturing Facility 73-04

Form 20.D.03

Rev. Original 23 Sep 2014

BICYCLE RACK BEAM ADAPTER – 100230-02

Work Order: 2017-101

Quantity: 21 PAIRS

Complete  
(initial or SCA #)

Date Open: 14 JUNE 2017

PO # 17053 X12  
# 17026 X9

General

These instructions apply to fabrication of AS350/AS355 bicycle rack beam adapters. Refer to the following drawings, at the current revision, for dimensions and details:

100230, Revision 0 – Bicycle Rack Beam Fabrication

1. Cut stock:

- a. Cut 1" x 4" 6061-T6 aluminum bar to 10.88" long.
- b. Record PO.

JC. DS

2. Machining:

- a. Insert stock on CNC using 1/8" deep vise jaws.
- b. Set 0 on top left far corner.
- c. Run program to machine slot and holes.
- d. Deburr machined edges.
- e. Flip part and run program to machine slot on opposite side.
- f. Tag in process parts.

JC.

3. Cutting:

- a. Cut stock in half on long dimension.
- b. Update tag for process parts.

JC. DS

4. Machining:

- a. Locate part in vise, flanged edge down, supported on machined edge.
- b. Set 0 on top left far corner.
- c. Run program to face to height and drill/tap holes. Ensure finished height is in accordance with drawing.
- d. Run tap to bottom of threaded holes.
- e. Update tag for in process parts.

JC.

5. Machining:

- a. Locate part in vise, flanged edge up
- b. Set 0 on top left far corner.
- c. Run program to face to height and taper. Ensure finished height is in accordance with drawing.
- d. Update tag for in process parts.

JC.

6. Deburring:

- a. Deburr all edges.
- b. Update tag for in process parts.

JC.

7. Painting Prep:

- a. Thoroughly clean parts and etch with Alumaprep in accordance with manufacturers instructions.
- b. Apply Alodine to parts in accordance with manufacturers instructions.
- c. Update tag for in process parts.

JK

8. Helicoils:

- a. Install 3/8-24 self locking helicoils into threaded holes. Apply a drop of Loctite 242 to threads before installing helicoil.
- b. Update tag for in process parts.

JK

9. Painting:

- a. Prime parts with Endura EP-2C epoxy primer or equivalent primer in accordance with manufacturers instructions.
- b. Paint parts with Endura EX-2C polyurethane paint or equivalent paint in accordance with manufacturers instructions.
- c. Update tag for in process parts.

JK

10. Final Inspection:

To be completed by a different person than the previous steps.

- a. Inspect 100230-02 beam adapters for conformity to drawings.
- b. Issue green tag for completed parts.

OK



# Aero Design Ltd. Component Fabrication

100215-01 Bicycle Rack Base

Work Order Number: 2017-101

Date: 14 JUNE 2017

## Notes:

Drilling speed to 320 RPM.

Rapid Tap cutting fluid or equivalent coolant required

## Rail

### Tasks

### SCA

1.	Record material PO below	
2.	Cut 78230 step extrusion to 82.75" in length	
	On each end, cut the side and bottom walls shorter by 1/8" leaving the tread rail full length IAW drawing 100215 Detail B	
3.	Deburr one end on buffing wheel	
4.	On the bottom wall, place a mark 7/8" from each end and drill 3/8" hole which will act as a drain and allow ventilation during the welding process	

## Manual Mill

5.	While supporting the long end of the rail, clamp aft end (dependant on LH or RH) into the manual mill vice	
6.	Using standard practices, zero off of the end and back of the part and set zero on the X and Y axis on the digital display	
7.	Set table to drill locations IAW drawing 100215 Detail C and bore .75" holes	
8.	Deburr edges and holes	

## Welding

9.	Wipe parts with Acetone or equivalent solvent	
10.	Place 100226-01 bushings in .75" holes and locate them IAW drawing 100215 Detail C	
11.	Weld IAW drawing 100215	
12.	Place cap 82720-04 on each end and weld IAW drawing 100215 Detail B	

## Beam

13.	Cut 1" x 8" 6061-T6 extruded bar to 24 7/8" in length.	JC.
14.	Install material in CNC mill ensuring RH edge overhangs for tool clearance	JC.
15.	Set material stop to ensure subsequent steps and parts return to the same location	JC.
16.	Load and run program 021 and 022	Jge
17.	Rotate part 180 degrees on plane	JC
18.	Load and run program 021 and 022	JC
19.	Separate parts by cutting along mark scribed during machining process	JC

20.	Install 100230 jig plate into CNC straddling vices and lock down	gc
21.	Using a soft face hammer, tap the jig down to ensure it is seated	gc
22.	Zero table using standard practices	gc
23.	Mount separated part on jig using 1/4" bolts	gc
24.	Load and run program 023	gc
25.	Using vertical band saw, remove tooling lug at the outboard end	gc
26.	On manual mill, zero off the end of the part using standard machining practices	gc
27.	Using standard practices, machine surface area from which lug was removed	gc
28.	Inspect finish and dimensions of final part.	gc

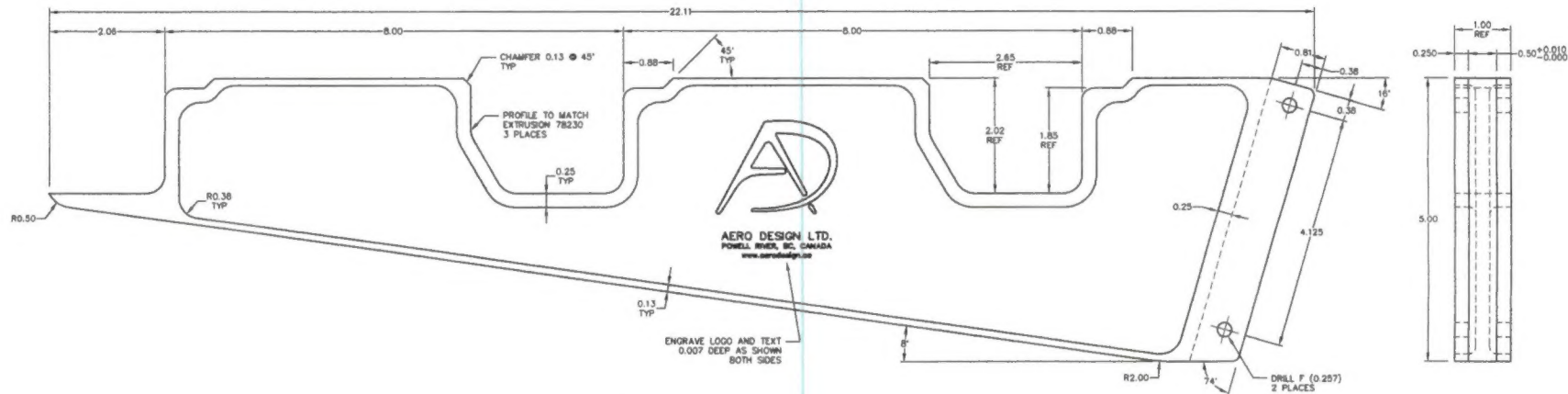
#### Rack Base Assembly

29.	Insert Helicoils in threaded bushings IAW drawing 100226	
30.	Install bike rack base beams into jig fixture	
31.	Install rails into beams	
32.	Weld IAW drawing 100215	
33.	Inspect finish and dimensions of final part.	
34.	Tag completed parts IAW Aero Design MPM.	

Material Purchase Order Number 17026 / 16058 (2)  
Batch Quantity 42

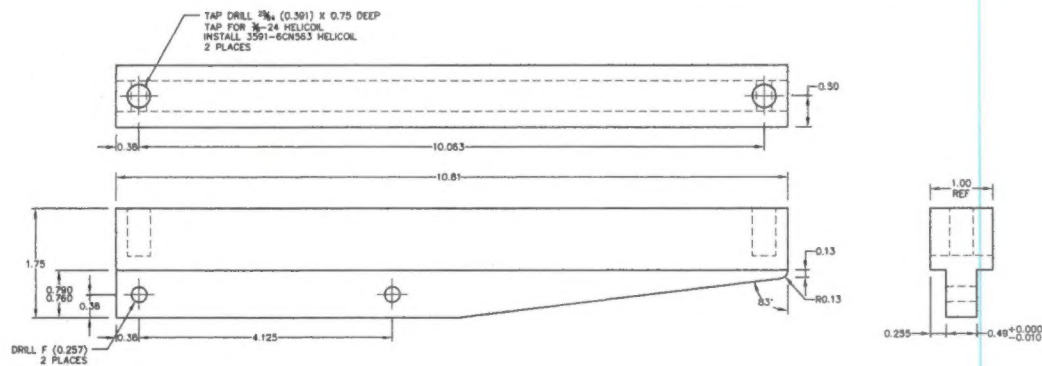







① BEAM

PART TO BE CNC MACHINED USING THIS DRAWING AS A TEMPLATE

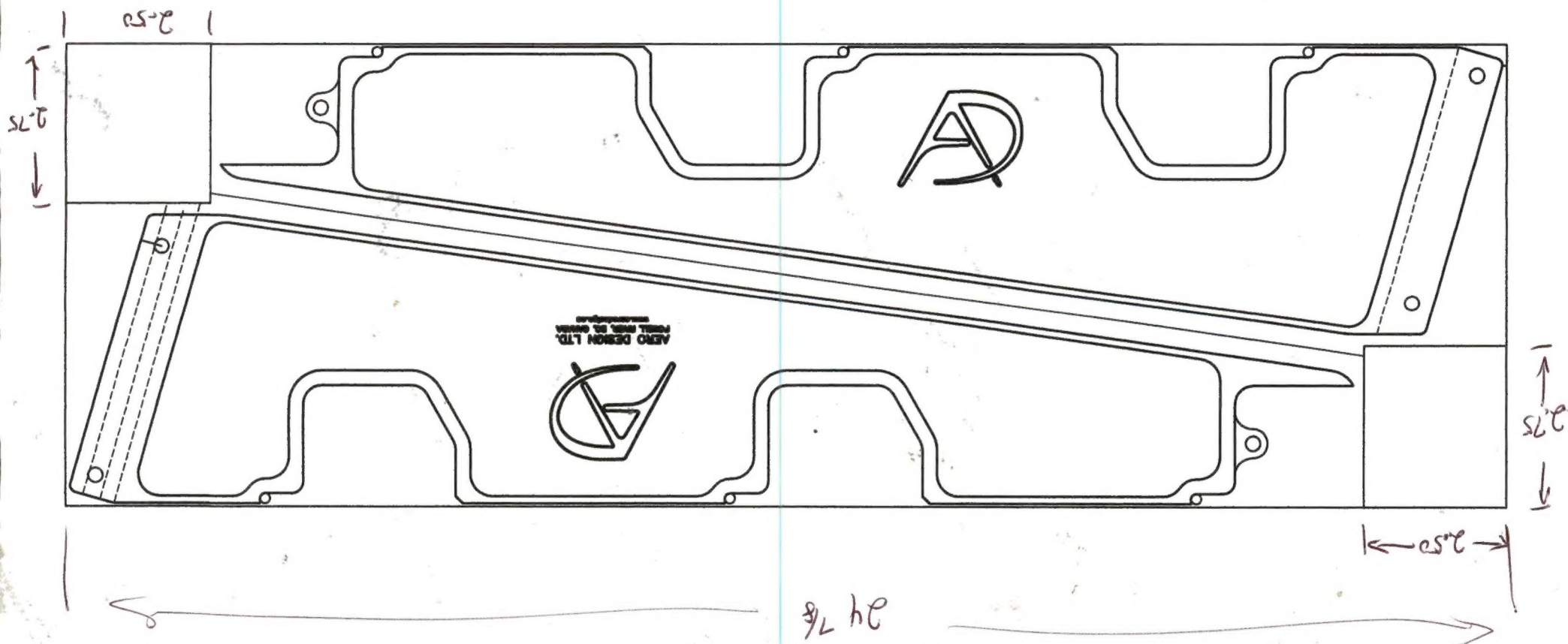


② ATTACHMENT BRACKET

- NOTES
1. REMOVE ALL BURRS AND BREAK SHARP EDGES.
  2. FINISH, 100230-02 ATTACHMENT BRACKET:  
THOROUGHLY DEGREASE, ALODINE, EPOXY PRIME AND POLYURETHANE PAINT.

2	3501-60N563	SELF-LOCKING HELICOID						
	100230-02	02 ATTACHMENT BRACKET	6061-T6 ALUMINUM	00-A-200/8	4 X 1 FLAT BAR			
	100230-01	01 BEAM	6061-T6 ALUMINUM	00-A-200/8	8 X 1 FLAT BAR			
G2	D1	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC	STOCK SIZE	
QTY	QTY	LIST OF MATERIALS						
APPROVALS DRAWN: JEFF CLARKE 13 JUNE 2016 CHECKED: JASON REKIVE 13 JUNE 2016				 <b>AERO DESIGN LTD.</b> 6888A MALASPINA ROAD POWELL RIVER, BC, CANADA, V8A 0G3 TEL: 604.683.5378 <a href="http://www.aerodesign.ca">www.aerodesign.ca</a>				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON:				AIRBUS HELICOPTERS AS350/AS355, EC130 BICYCLE RACK INSTALLATION BEAM FABRICATION				
DECIMALS ANGLES X.XXX $\pm 0.010$ $\pm 1/2'$ X.XX $\pm 0.03$ X.X $\pm 0.1$				SCALE 1 : 1 SHEET 1 OF 1				
				DIMC SIZE <b>A1</b>		DIMC NO. <b>100230</b>		REV. <b>0</b>

8-091 0d  
PO 16048  
92041 0d




8017-101



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REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	INITIAL ISSUE		



2	3591-60M563	SELF-LOCKING HELICOR		8061-16 ALUMINUM	00-A-200/B	4 X 1 FLAT BAR
	100230-02	02	ATTACHMENT BRACKET	8061-16 ALUMINUM	00-A-200/B	8 X 1 FLAT BAR
	100230-01	01	BEAM			
02	01	PART NO.	ITEM	DESCRIPTION	MATERIAL	MATERIAL SPEC
QTY	QTY	LIST OF MATERIALS				

APPROVALS DRAWN: JEFF CLARKE CHECKED: JASON REKVE		DATE 13 JUNE 2016 13 JUNE 2016	 <p><b>AERO DESIGN LTD.</b>          9606A MALASPINA ROAD          POTWELL RIVER, BC, CANADA, V8A 0G5          TEL: 604-468-5079    <a href="http://www.aerodesign.ca">www.aerodesign.ca</a></p>
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ON: DECIMALS      ANGLES .X,XXX ±0.010      ±1/2" .X,XX ±0.03 .X, X ±0.1		AIRBUS HELICOPTERS AS350/AS355, EC130 BICYCLE RACK INSTALLATION BEAM FABRICATION	
SCALE 1 : 1 SHEET 1 OF 1	DWG. SIZE A1	DWG. NO. 100230	REV. 0